

EVALUATION OF SDL ADJUSTMENT MEASURE FOR PHASE 2 (BUSINESS CASES) – PROVISIONAL MDBA ASSESSMENT

TITLE OF MEASURE: YARRAWONGA TO WAKOOL REACH CONSTRAINTS CONCEPT PROPOSAL

PROPONENT: NEW SOUTH WALES

Key points/summary

- The proposed flow limit of 30,000 ML/d would only meet limited environmental water requirements within the reach and would contribute very little to improving downstream environmental indicators compared to what is already feasible under existing constraints. The proposal would prevent both the River Murray in South Australia and Hume to Yarrowonga constraints proposals from achieving their objectives, rendering both upstream and downstream Murray constraints proposals unviable.
- The proposal has been nominated as a supply measure, however the nominated flow rate – 30,000 ML/d downstream of Yarrowonga is below the benchmark of 40,000 ML/d used in the Sustainable Diversion Limit adjustment assessment method.
- The MDBA notes that the business case is presented as a concept proposal. This differs from other supply/constraints measure proposals which have submitted more progressed business cases. Overall the quality of the proposal reflects its concept status with considerable details lacking with respect to information relating to flows of 30,000ML/d. Instead, the draft concept proposal presents technical information mostly for flows of 35,000 and 50,000ML/d downstream of Yarrowonga. It is therefore difficult to assess the benefits, impacts and risks for the actual proposed flow rate.
- The cost estimates for the proposal are in excess of \$306 million. The MDBA is of the opinion that the proposal in its current state does not justify this significant expenditure. The concept proposal requires significant further work in order for the benefits, impacts and risks of this proposal to be fully assessed and the investment justified.
- There are limited details on the impacts, benefits and risks in the Victorian section of the reach.

1. Eligibility (3.1)

1.1 Supply measure requirements (3.1.1)

The measure has been nominated as both a constraints and supply measure. However, the proposed flow rate of 30,000 ML/d is less than the flow rate used in benchmark conditions for assessment of SDL adjustment measures. The MDBA recommends that further evidence be provided to justify the proposal's nomination as a supply measure.

1.2 Measures not included in the benchmark conditions of development (3.1.2)

As discussed in the above section *Supply measure requirements (3.1.1)*, the proposed flow rate at downstream of Yarrawonga Weir is 30,000 ML/d. The flow rate assumed in the benchmark conditions is 40,000 ML/d downstream of Yarrawonga Weir.

2. Ecological values of the site (4.2)

The concept proposal provides a high-level description of the key environmental assets in the reach that will be influenced by the proposed measure.

A list of species of significance, including the presence of any threatened species is not provided.

Appendix 2 of the proposal identifies the Ramsar listed Barmah-Millewa and Gunbower-Koondrook-Perricoota Forests as being located within the reach and provides commentary regarding these sites.

The concept proposal does not include a description of the current ecological condition of the site (e.g. whether the site is highly modified).

It is recommended that further information on the ecological significance of the mid-Murray floodplain be referenced for inclusion in the concept proposal.

3. Ecological objectives and targets (4.3)

The concept proposal's provides objectives at the beginning of section 3 and expected benefits in section 3.3. These tend to be general in nature.

The concept proposal would benefit from more clearly stating what ecological objectives the proposal is expected to achieve in regards to site-based flow objectives and targets for the nominated flow rate of 30,000 ML/day

4. Anticipated ecological outcomes (4.4)

4.3 Anticipated ecological benefits (4.4.1)

The proposal outlines the overall expected within-reach environmental outcomes to include growth and reproduction of vegetation communities, increased diversity of plant and animal species, and support for bird and native fish breeding. The proposal also expects to increase the cycling of nutrients within the food chain and flush out sediments, saline and alkaline water from the deeper holes in the river system.

Appendix 1 of the concept proposal identifies the ecologically relevant flow thresholds, durations and timing based on the objectives of the Basin Plan, combined with local knowledge. These water requirements focus on commence-to-flow rates for nominated creeks and wetlands etc., with the expected environmental outcomes in relation to these flows described as supporting water quality, nutrient cycling and citing broad flora and fauna benefits.

The proposal provides a range of commence-to-flow rates throughout the reach, but does not link these ecologically relevant flow thresholds with what is expected to be achieved by the nominated flow rate of 30,000 ML/d downstream of Yarrawonga Weir. For example, Appendix 1 of the proposal identifies that *'35,000 ML/day [downstream of Yarrawonga Weir] is the minimum flow to inundate River red gum forest, open wetlands and provide a sufficient one metre depth across the Moira grass plains, and provide effective flows to transfer dissolved organic carbon, nutrients and plankton into the main river channels....'* The proposal identifies a minimum of 35,000 ML/d as an ecologically relevant flow rate, however this is above the flow rate nominated in the current draft concept proposal.

Table 9 in Appendix 2 describes the expected area of inundation (hectares) of broad classifications of flood-dependent native vegetation types for flow rates of 20, 35, 50 and 65,000 ML/d downstream of Yarrawonga. It is recommended that the proposal provide further commentary on the expected benefits of a flow rate of 30,000ML/d in this context, both within the reach and the expected system wide benefits.

The proposal as it stands will not contribute to greater system-wide benefits, and prevents environmental targets being achieved both upstream and downstream of the reach. A higher flow rate would need to be proposed downstream of Yarrawonga in order to meet the potential for system-wide benefits.

The concept proposal would benefit from further detail on how the implementation of the proposal is likely to bring about the anticipated environmental benefits.

4.4 Potential adverse ecological impacts (4.4.2)

The concept proposal identifies potential adverse impacts on the environment if the proposal were to be implemented, however, mitigation strategies for these impacts are not provided, nor is a risk assessment for potential adverse environmental effects provided.

5. Hydrology of the area and environmental water requirements (4.5)

5.3 Current hydrology and proposed changes to the hydrology (4.5.1)

The hydrology of the reach is complex and is covered in several sections of the proposal. In Appendix 1, the proposal quantifies the reduction in frequency of natural flows through the reach as a result of regulation.

The proposal outlines the principles surrounding when higher flows might be called upon based on using natural cues such as rainfall, seasonality and tributary inflows.

Appendix 1 of the concept proposal outlines in broad terms the expected or desired frequency, timing and duration of *'low flow events – 10,000 – 20,000ML/d'*, *'low to mid-sized events – 20,000-50,000ML/d'* and a case study of a hybrid natural/managed event through Barmah-Millewa Forest.

Landholders have identified that they are not able to support the proposal unless the likely frequency and duration of events is better defined. Further work will be needed on this.

5.4 Environmental water requirements (4.5.2)

Appendix 2 of the proposal identifies water requirements and commence-to-flow rate for key environmental assets in the Yarrawonga to Wakool Junction reach. However the link between these requirements and which of these are able to be met by the proposal is not clear.

The proposal would benefit from clarification of the watering requirements able to be achieved by 30,000ML/d downstream of Yarrawonga.

6. Operating regime (4.6)

As noted in 5.3 above, Appendix 1 of the proposal outlines the expected or desired frequency, timing and duration events in broad terms.

The principles around when each event might be delivered and what each event would broadly look to achieve is also presented.

It should be noted that this is not an infrastructure based measure.

7. Assessment of risks and impacts of the operation of the measure (4.7)

The concept proposal states that a detailed risk assessment has been undertaken, but only a high level analysis is presented. The proposal would be improved by providing the detailed risk assessment.

The only risk with a residual rating of high was the risk of unintended environmental outcomes resulting from managed environmental flows. As noted above in 4.4 *Potential adverse ecological impacts (4.4.2)*, the proposal should provide a separate risk assessment for potential adverse environmental effects.

There are a number of risks which are not well covered. It is noted that the proponent proposes to undertake more detailed review of mitigation strategies and residual project risks. In doing so, the proposal would be enhanced by including commentary on the following issues:

- The risk that the project fails to secure agreement from all landholders to allow higher environmental flows. There may need to be some consideration of changes to legislation to ensure river operating agencies are covered in relation to third party liability issues arising as a result of delivering overbank environmental flows.
- The safety risk to third parties due to environmental watering events.
- How longer-term operational and maintenance costs would be dealt with.
- The MDBA is supportive of the proposal to conduct trial releases to test and monitor the augmentation of tributary inflows. This is consistent with the concept of commissioning structures in stages rather than operating at full capacity on the initial event. However, the process for implementing these arrangements is not provided. Specifically, will easement agreements be established to allow initial “trial” flows, or will another method of compensation be used during this period?

Impacts and mitigation

The proposal does not make it clear why the flow of 30,000 ML/d downstream of Yarrowonga has been selected, or how it achieves the greatest environmental benefit with the least possible water. The proposal makes the argument for flows of 30,000 ML/d on the basis that:

- This target flow is a level that affected landholder believe can be effectively mitigated
- There was considerable landholder concern about flows in the 40,000 to 50,000 ML/d range

It is not clear in the proposal why it would not be possible to mitigate any third party impacts of flows above 30,000 ML/d. The mitigation measures offered could potentially be applied to flows above 30,000 ML/d, just as they could be applied to flows of 30,000 ML/d.

Conceivably, flows of 30,000 ML/d have been chosen as a target because the risks associated with delivering flows above that threshold would be too great. However, this argument is not substantiated in the proposal.

The proposal is also unclear on the scale of mitigation measures being suggested. It is unclear if the proposal is suggesting to actually implement mitigation measures for flow rates up to 50,000 ML/d, to act as a physical buffer for the delivery of 30,000 ML/d flows, or if the proposal is suggesting to simply use the costings developed for implementing mitigation measures up to 50,000 ML/d as an added cost contingency.

In either scenario, the proposal does not justify why such a large mitigation buffer is required – either physically or financially – and why the buffer is based specifically on flows of 50,000 ML/d. The proposal would be stronger if it justified more rigorously (i) the proposed target flows and (ii) the size of the proposed buffer above those flows.

8. Complementary actions and interdependencies (4.9)

The Yarrowonga-Wakool Junction concept proposal was originally conceived as part of an integrated package. In 2014 Basin governments, through their water ministers, agreed that, as a first priority, the three River Murray constraint measures be developed as integrated business cases.

To this end, the MDBA does not consider that this concept proposal reflects a consistent or integrated approach with the other two River Murray key focus areas. Specifically, the three River Murray proposals do not all assume the same flow rates in the Yarrowonga-Wakool reach. The flow rate proposed downstream of Yarrowonga affects the viability of both the Hume-Yarrowonga and River Murray in South Australia business cases.

The proposed Hume-Yarrowonga constraints measure will not achieve its stated outcomes unless the maximum flow rate (up to 30,000 ML/day downstream of Yarrowonga Weir) in this draft proposal is increased. It would also be difficult to justify implementing the Hume-Yarrowonga constraints proposal given the Yarrowonga-Wakool proposal could be delivered within existing constraints in the Hume-Yarrowonga reach (combined with unregulated flows in the Ovens River).

Similarly, if the proposed maximum flow rate downstream of Yarrowonga Weir remains at 30,000 ML/d, the proposed South Australian constraints measure will not achieve its stated

outcomes. Unless the proposed flow rate downstream of Yarrawonga is increased, flows in the range 60,000 to 80,000 ML/d at the South Australian border would not be achievable, making it difficult to justify implementing the South Australia constraints proposal and severely impacting the potential environmental benefits that could be achieved through an integrated approach to constraints in the River Murray.

This project is also dependent on the implementation of prerequisite policy measures (ability to deliver water on top of unregulated flows and the crediting of environmental return flows for downstream environmental use).

9. Costs, Benefits and Funding Arrangements (4.10)

The MDBA considered the draft concept proposal, which had costs up to a 'high end' of \$147 million, to have a high level of contingency. This more recent version of the concept proposal has increased the cost in excess of \$306 million. The justification for the new cost items and the methodology used for the calculation of the costs is not supported with any detailed evidence.

Of particular note are the following costs from page 74 of the proposal, which alone add over \$126 million:

- *An additional \$15.5 Million contingency to account for additional impacts by grazing pressure from native animals, increased forgone grazing and agistment costs \$31 Million at 50%.*
- *An additional \$71.9 Million to account for increased infrastructure costs associated with properties with at least 50ha of inundated land (250ha of interrupted access), based on \$500,000 per structure and 1.25 structures per farm (115 farms).*
- *An additional cost of \$38.9 Million to cover the costs of legal and business advice to landholders – based on \$100,000 per farm with an area of 10ha or greater inundated (389 farms).*

Given the limited justification for the increased costs and the low level of flow rate targeted by this proposal, it is difficult to justify this significant expenditure.

10. Project governance and project management arrangements (4.11)

10.1 Legal and statutory requirements (4.11.2)

The Constraints Management Strategy Yarrawonga to Wakool Reach Draft Concept Proposal potentially have impacts on the NSW Water Sharing Plan (WSP) for the New South Wales Murray and Lower Darling Regulated Rivers Water Sources 2016, which is a transitional water resource plan (WRP). Such changes may relate to the specification of channel capacity constraints in section 33 of the WSP.

However the information that has been provided in these documents is at a high level, so it is unclear what the extent of such changes may be, and whether any changes would introduce any new inconsistency with the Basin Plan compared with the existing transitional WRP.

If the proposal requires changes to the WSP and if NSW wishes the amendments be recognised as part of the transitional plans under the Water Act 2007, they should be submitted to the MDBA so the “no less consistent” test can be applied.